EnGenius®
Get Connected | Get EnGenius

M5000

Wireless 802.11 a/b/g Outdoor AP

- 2.4GHz / 5GHz
- 54Mbps
- 802.11 a/b/g
- MESH Function

PRODUCT DESCRIPTION

M5000 is a long range outdoor wireless Access Point / Client Bridge that operates in both **5GHz and 2.4GHz** frequency. It provides high bandwidth up to 54Mbps and features high transmitted output power as well as superior sensitivity. M5000 extends radio coverage, avoids unnecessary roaming between Access Points and ensures a stable wireless connection while reduces the number of required equipments. With mesh function implemented, it can be used to establish mesh network, reduces the expense of equipment and risk of disconnection.

M5000 provides user friendly interface including user friendly distance control ranges from 1KM up to 30KM and RSSI LED indicator offering real time signal status. It comes with PoE injector for convenient outdoor installation.

M5000 enforces transmission security with full support of latest encryption mechanism including 64/128-bit WEP, WPA and WPA2. With 14dBi internal antenna and superior performance, M5000 makes an optimal wireless solution for both small and large scale projects.

M5000 Datasheet Version 111110

*Theoretical wireless signal rate based on IEEE standard of 802.11 a, b, g, n chipset used. Actual throughput may vary.Network conditions and environmental factors lower actual throughput rate.
** All specifications are subject to change without notice

BUSINESS CLASS
M5000

EnGenius®
Get Connected | Get EnGenius

Datasheet
M5000

FEATURES

Wireless

- **2.4GHz/5GHz** It works in 2.4GHz or 5GHz frequency spectrum.
- **MESH** It is designed to establish a network with best link reliability under harsh outdoor environment. There is not any limitation on transmission and network communication. In this mode for better performance, recommended 1 Gateway with 4 Relay in linear and radiative deployment scenario.
- **High output power** Transmit high output power programmable for different country selections.
- **High Data Rate** High speed transmitting rate up to 54Mbps, support large payload such as MPEG video streaming**.**
- **Multifunction application** Access Point/Client Bridge/Client Router/WDS Function/MESH**.**
- **Long range transmitting** Transmit power control and distance control (ACK timeout)**.**
- **Narrow Bandwidth** Provide 5MHz/10MHz/20MHz bandwidth selection**.**
- **Signal Strength Display** RF signal strength status shown LEDs of 3 colors, making network build-up easier. LED indicators have the best transmit and receive signal for traffic communication**.**
- **Multiple SSID** 4 SSID supported. Each SSID can set itself wireless or WAN access setting**.**
- **QoS(WMM)** Enhance performance and density.

Networking

- **PPPoE & PPTP** Point-to-Point Protocol over Ethernet at Client Router mode. This function will keep trying when failed or disconnected. Point-to-Point Tunneling Protocol (PPTP) is a method for implementing virtual private networks.
- **Traffic Shaping** Traffic shaping is the control of network traffic in order to optimize or guarantee performance.
- **VPN Pass Through**

Security

- **802.11i** WEP, WPA, WPA2 (Encryption support TKIP/AES)
- **MAC address functions** MAC address filter (AP mode)
- **802.1x** IEEE802.1x Authenticator
- **Station isolation** L2 isolation

Management

- **802.11i & 802.1x** WEP, WPA, WPA2 (Encryption support TKIP/AES), IEEE802.1x Authenticator
- **MAC address functions** MAC address filter (AP mode) up to 50
- **AP Detection** Scan all neighboring APs with their channels and signal strengths automatically for best operated channel selection on installing
- **Firmware Upgrade** Upgrading firmware via web browser, setting are reserved after upgrade
- **Reset & Backup** Reset to factory default. User can export all setting into a file via WEB
- **Ping & Trace Route** Built-in PING function & Trace Route function in Web GUI
- **MIB** MIB I, MIB II(RFC1213) and Private MIB
- **SNMP** V1, V2c

*Theoretical wireless signal rate based on IEEE standard of 802.11 a, b, g, n chipset used. Actual throughput may vary.Network conditions and environmental factors lower actual throughput rate.
** All specifications are subject to change without notice

EnGenius®
Get Connected | Get EnGenius

Datasheet
M5000

TECHNICAL SPECIFICATION			
> Hardware Specification			
MCU/RF	Atheros AR2313+AR5112		
Memory	32MB SDRAM		
Flash	8MB		
Physical Interface	1 x 10/100 Fast Ethernet RJ-45 1 x Reset Button 1 x Antenna Switch (Internal and External Switch) 2 x SMA Connector (One is for 2.4GHz and another is for 5GHz)		
LED indicators	Power/ Status LAN (10/100Mbps) WLAN (Wireless is up) 3 x Link Quality (Client Bridge mode) • Green: Good Quality • Yellow: Marginally Acceptable Quality • Red: Bad Quality		
Power Requirements	Active Ethernet (Power over Ethernet) Proprietary PoE design Power Adapter 24V / 1A DC		
Regulation Certifications	FCC Part 15C/15B/15E, EN301 893, EN 300 328, EN 301 489-1/-17, EN60950, IC Certification		
> RF Specification			
Frequency Band	**802.11a =** 5.150~5.350GHz, 5.470~5.725GHz, 5.725~5.825GHz **802.11b/g =** 2.412~2.472GHz		
Modulation Technology	OFDM = BPSK, QPSK, 16-QAM, 64-QAM DSSS = DBPSK, DQPSK, CCK		
Operating Channels	**802.11a = See the Table1** **802.11b/g =** 11 for North America, 14 for Japan, 13 for Europe		
Receive Sensitivity (Typical)	**802.11a** -92dBm @ 6Mbps, -73dBm @ 54Mbps	**802.11g** -92 dBm @ 6Mbps, -75 dBm @ 54Mbp	**802.11b** -97 dBm @ 1Mbps -91 dBm @ 11Mbps

*Theoretical wireless signal rate based on IEEE standard of 802.11 a, b, g, n chipset used. Actual throughput may vary.Network conditions and environmental factors lower actual throughput rate.
** All specifications are subject to change without notice

EnGenius®
Get Connected | Get EnGenius

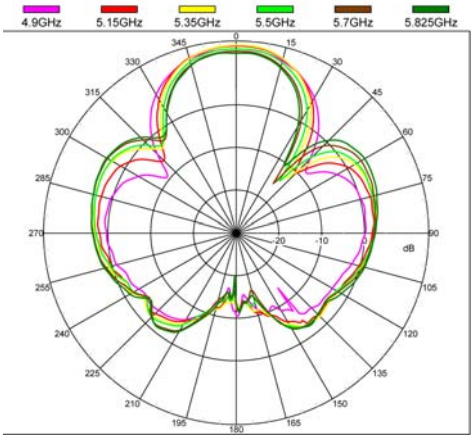
Datasheet
M5000

Available transmit power (Average power)	FCC		ETSI	
	Frequency	Power	Frequency	Power
	5.150~5.350 GHz **IEEE802.11a**	26dBm@6~24Mbps 24dBm@36Mbps 22dBm@48Mbps 20dBm@54Mbps	5.150~5.350 GHz **IEEE802.11a**	26dBm@6~24Mbps 24dBm@36Mbps 22dBm@48Mbps 20dBm@54Mbps
	5.470~5.725 GHz **IEEE802.11a**	26dBm@6~24Mbps 24dBm@36Mbps 22dBm@48Mbps 20dBm@54Mbps	5.470~5.725 GHz **IEEE802.11a**	26dBm@6~24Mbps 24dBm@36Mbps 22dBm@48Mbps 20dBm@54Mbps
	5.725~5.825 GHz **IEEE802.11a**	26dBm@6~24Mbps 24dBm@36Mbps 22dBm@48Mbps 20dBm@54Mbps	5.725~5.825 GHz **IEEE802.11a**	26dBm@6~24Mbps 24dBm@36Mbps 22dBm@48Mbps 20dBm@54Mbps
	2.412~2.462 GHz **IEEE802.11g**	26dBm@6~24Mbps 24dBm@36Mbps 23dBm@48Mbps 22dBm@54Mbps	2.412~2.472 GHz **IEEE802.11g**	26dBm@6~24Mbps 24dBm@36Mbps 23dBm@48Mbps 22dBm@54Mbps
	2.412~2.462 GHz **IEEE802.11b**	27dBm@1~11Mbps	2.412~2.472 GHz **IEEE802.11b**	27dBm@1~11Mbps

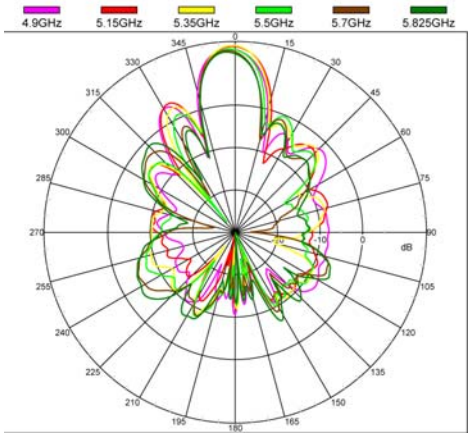
Internal Antenna (Dual Polarization)	Antenna Specification	
	Gain	14dBi
	Radiation	Directional
	Frequency Band Range	5.1-5.8GHz
	Horizontal -3dB Bandwidth	35°
	Vertical -3dB Bandwidth	15°

> Antenna Radiation Pattern

Horizontal Azimuth



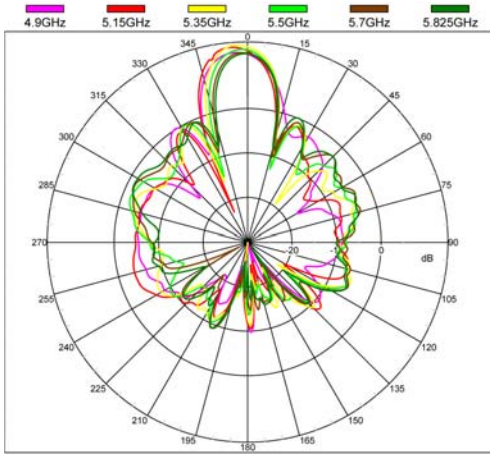
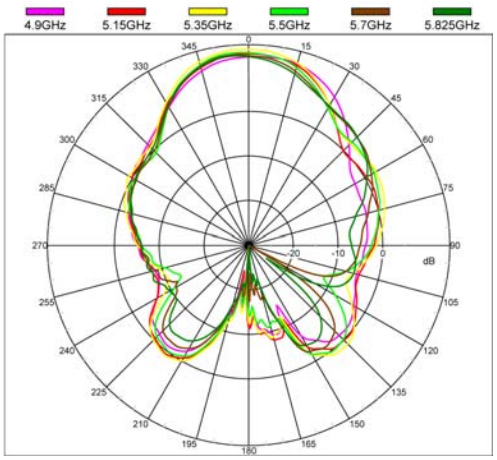
Horizontal Elevation



*Theoretical wireless signal rate based on IEEE standard of 802.11 a, b, g, n chipset used. Actual throughput may vary.Network conditions and environmental factors lower actual throughput rate.
** All specifications are subject to change without notice

EnGenius®
Get Connected | Get EnGenius

Datasheet
M5000

Vertical Azimuth	Vertical Elevation
	

External Antenna	2 x SMA connector (for 2.4GHz and 5GHz individually)

SOFTWARE FEATURES

> General	
Topology	Infrastructure
Protocol / Standard	IEEE 802.3 (Ethernet) IEEE 802.3u (Fast Ethernet) IEEE 802.11b/g (2.4GHz WLAN)
Operation Mode	**802.11 a/b/g** Access Point Client Bridge Client Router WDS AP/CB Mesh Function
LAN	DHCP Server DHCP Client
VPN	VPN Pass through
Wireless	Channel Selection (Setting varies by countries) Transmission Rate 11 a/b/g : 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps Long distance transmission : 1km to 30km Transmit power table Antenna Diversity with Dual Polarization Signal Strength indication using LEDs Auto Channel Selection AP Detection Traffic Shaping PPPoE(CR mode) and PPTP Narrow Bandwidth 5MHz/10MHz/20MHz Support

*Theoretical wireless signal rate based on IEEE standard of 802.11 a, b, g, n chipset used. Actual throughput may vary.Network conditions and environmental factors lower actual throughput rate.
** All specifications are subject to change without notice

	PING function and Trace Route function MSSID Support BSSID VLAN Support
Security	WEP Encryption-64/128/152 bit WPA/WPA2 Personal (WPA-PSK using TKIP or AES) WPA/WPA2 Enterprise (WPA-EAP using TKIP) 802.1x Authenticator Hide SSID in beacons MAC address filtering, up to 50 field Wireless STA (Client) connected list
QoS	WMM
> Management	
Configuration	Web-based configuration (HTTP)
Firmware Upgrade	- Upgrade firmware via web-browser - Keep latest setting when f/w update
Administrator Setting	Administrator password change
Reset Setting	- Reboot (Press 1 second) - Reset to Factory Default (Press 5 seconds)
System monitoring	Status, Event Log
SNMP	V1, V2c
MIB	MIB I, MIB II (RFC1213)
Backup & Restore	Settings through Web
Time setting	NTP (Auto-setting of time); Time setting manually

ENVIRONMENTAL AND MECHANICAL	
Temperature Range	Operating -20°C~70°C Storage -30°C to 80°C
Humidity (non-condensing)	0% ~ 95% typical
Dimensions	260mm (L) x 84mm (W) x 55mm (H)
Weight	300g

PACKAGE CONTENT
► 1 x (M5000)
► 1 x PoE Injector (EPE-1212)
► 1 x Power Adaptor (24V/1A)
► 1 x CD with User's Manual
► 1 x QIG
► 1 x Metal strap
► 2 x Special screw set

*Theoretical wireless signal rate based on IEEE standard of 802.11 a, b, g, n chipset used. Actual throughput may vary.Network conditions and environmental factors lower actual throughput rate.
** All specifications are subject to change without notice